出國報告(出國類別:開會)

東南亞氣候研究之合作及整合研究 工作坊 (Collaborative And Integrative Climate Research In Southeast Asia) 出國報告

服務機關:農業部林業及自然保育署

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派赴國家:菲律賓

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摘要

「SEACARE 2025:東南亞協作與整合氣候研究工作坊」於 2025年2月28日至3月5日在菲律賓納加市舉行,聚焦氣候變遷、自然資源管理與原住民族知識整合。臺灣代表團由農業部林業及自然保育署、國立政治大學及苗栗南庄賽夏族部落代表組成,並進行三場專題分享。林華慶署長與根誌優理事長介紹南庄部落的森林共管經驗,說明政府如何與原住民族建立夥伴關係,推動文化復振與資源永續利用,獲得國際高度關注,多位學者並表達實地訪查與後續合作意願。政治大學官大偉教授則提出原住民知識主流化與 NbS 的觀點,強調需透過中介機制連結傳統智慧與現代科學,作為氣候調適的重要參考。

工作坊期間,來自多國的學者就跨學科合作與在地觀點等議題展開深入交流,並一致肯定臺灣實踐經驗的參考價值。建議未來可持續深化與 SEACARE 網絡的合作,並推動臺灣案例整理與國際化,以進一步提升臺灣在區域自然治理與原住民政策上的能見度與貢獻。

關鍵字:自然資源共管、原住民知識、氣候韌性、SEACARE

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壹、目的

「SEACARE 2025:東南亞協作與整合氣候研究工作坊」旨在 深化針對氣候變遷的跨國與跨領域合作,回應東南亞地區在糧食、 水資源、生態與社區韌性方面日益複雜的挑戰。此次工作坊延續 加州大學洛杉磯分校(UCLA)與臺灣—菲律賓原住民知識、在 地知識與永續發展海外科研中心(CTPILS)多年來於東南亞推動 的研究合作,進一步拓展臺灣、美國與菲律賓三方在原住民族知 識、生態治理與永續發展領域的對話基礎。

本屆工作坊由 UCLA 與菲律賓帕蒂多州立大學 (Partido State University) 共同主辦,政治大學研究團隊亦在臺菲科研中心的合作基礎上積極參與,展現臺灣在全球永續議題與原住民治理實踐中的角色與貢獻。主辦單位本次並特別邀請農業部林業及自然保育署與苗栗南庄蓬萊部落實際與會交流,以專題演講形式分享我國在原住民自然資源共管之制度發展與實務經驗,討論政府與部落在互信基礎上協力治理的模式,也提供國際夥伴一個關於多元利害關係人協作的實踐範例,並以此為契機創造未來更多合作交流的可能性。

貳、過程

一、活動概述

本次會議由菲律賓 Partido State Universi (帕提多州立大學) 主辦、UCLA 東南亞研究中心共同贊助。工作坊旨在發展跨學科 領域的研究合作,透過此研討平臺整合自然科學、社會科學與原 住民文化實踐工作,並商討具氣候韌性的策略,以應對東南亞區 域的氣候問題和自然災害。與會者來自不同領域,包含氣候學者、 地質學者、環境生態學者、考古學者、文化人類學者、文化工作 者、地方政府主管,發表內容從各自研究專長切入,圍繞氣候變 遷、糧食安全、自然資源可用性、社區韌性、文化智慧在地性等 主題。除分享各自研究成果外,也促進知識共享,推動資源整合 與研究團隊間的交流,鼓勵未來的合作計畫與跨區域網絡的建立。

二、活動議程

日期	行程
2月28日	臺北-菲律賓(Naga)/歡迎晚宴與新書發表會
3月1日	1. 開幕致詞
	2. 主題演講 1-「氣候變遷、永續發展與東南亞環境展望」
	3. 大會論壇1:「跨學科研究:氣候科學、考古與原住民知
	識整合」
	4. 專題演講:「臺灣原住民傳統領域與資源共同治理之探
	討」
	主持人:官大偉博士,臺灣國立政治大學,教授兼系主
	任
	講者:
	(1)林華慶博士,臺灣農業部林業及自然保育署,署長
	(2)根誌優長老,臺灣有限責任苗栗縣賽夏族原住民林
	業暨勞動合作社,理事長
	5. 小組討論 1:「東南亞長期氣候韌性方法學探討」
	6. 小組討論 2:「原住民傳統智識與氣候調適:文化智慧與
	科學研究之整合」
	7. 大會論壇2:「永續未來:氣候變遷下的農業、生態系統
	與海洋資源」
	8. 晚宴
3月2日	1. 社區活動:「Longacre 的遺產:民族考古學與菲律賓陶
	器研究」-參觀帕提多州立大學 Isarog 博物館及陶藝示
	範
	2. 主題演講 2: 推動原住民族傳統智識於科學及政策領域
	之主流化」
	3. 小組論壇3:「東南亞防災減災與整合性策略」
	4. 小組論壇4:「海洋生態系與里海:以歷史數據與現代科
	學促進海岸韌性」
	5. 分組討論:東南亞整合氣候研究與原住民知識的方向與
2 11 2 -	討論 CEACARE - 75 N N (R 1 CL R 1 H)
3月3日	SEACARE 工作討論 (Katha Glass Beach House)
3月4日	菲律賓(Naga)-菲律賓(馬尼拉)/市區快速參訪
3月5日	菲律賓(馬尼拉) – 臺北

參、 會議說明

一、臺灣經驗分享

(一)專題演講:「臺灣原住民傳統領域與資源共同治理之探討 (Conversation on Co-Stewardship of Indigenous Landscape and Resources in Taiwan)」—林華慶署長、根誌優理事長

由林業保育署林華慶署長與苗栗縣南庄賽夏族林業合作社根誌 優理事長,共同分享臺灣原住民族知識與現代科技結合的經驗, 分享內容分成以下兩部分:

1. 從對立到共管:臺灣政府與原住民合作推動自然資源共同管理

由於日本殖民時期的森林國有化政策,使臺灣大部分的森林 被劃為國有土地,現由農業部林業保育署負責管理,該等範 圍與原住民族傳統生活場域高度重疊,因此族人在土地與資 源使用方式上,長期受到國家法律嚴格限制,導致原住民族 與林業主管機關衝突不斷,彼此缺乏信任,也使林業與自然 資源政策難以推行。為改變此僵局,林業保育署自106年起, 秉持與原住民族共享的核心價值與資源永續利用精神,推動 國有森林的共管與資源共享。過修訂《森林法》與原住民族 共管要點,逐步鬆綁相關法規,建立以部落為對等主體的共 管制度,促進雙方合作。

以苗栗南庄賽夏部落為例,林業保育署新竹分署自 107 年與賽夏族舉行和解儀式後,雙方展開緊密合作,攜手推動山林共管。透過共同經營國有林班地,發展林下養蜂、段木香菇栽培、林下養雞等多元綠色產業,參與林業剩餘資材再利用與森林產品加值,並成立合作社發展部落生態旅遊,有效運用自然資源,創造綠色里山經濟。透過政府與原住民族的合作,不僅發展出與自然共生的永續發展模式,更吸引部落青年返鄉,推動文化復振及傳統山林智慧的傳承。

林華慶署長於分享時特別指出,傳統知識體系結合現代科技,

可以作為自然資源永續利用與傳統文化復振的有效取徑,以瀕危植物「南庄橙」復育為例,部落族人不僅實際參與保護母樹、採種育苗等物種保存,更發展出南庄橙的創新食品(南庄橙果醬)與精油等應用,開創物種利用價值,復振在地經濟並保存傳統智識文化,創造部落、森林與政府三贏結果。

2. 尊重自然與文化:賽夏族走出永續山林的新路

苗栗縣南庄賽夏族林業合作社主席根誌優長老,分享賽夏族 人在與政府機關溝通過程,與過往「上對下」、「具獨斷性」 溝通模式不同,自與林業保育署建立夥伴關係以來,都以「雙 方協調」為主,並且感受到林業保育署尊重傳統智慧和賽夏 文化的合作誠意,逐步建立彼此互信關係。

在部落整體發展上,根治優長老強調「重視環境,也重視市場」。在發展經濟前,思考如何讓環境更好、生態永續,如何因應氣候環境變化,也重視環境棲地的保育,並在林業保育署協助之下,部落族人也主動投入環境棲地保育的生態調查,共同為自然生態盡一份心力。

部落同時發展循環經濟,過去三年伐木所剩下來廢材,以及 種植的果樹、修下來的枝條枝葉,在部落都會造成環境污染, 現在通通都變成綠色的產業,並透過合作社機制,改善部落 族人經濟條件,讓更多年輕族人回到部落發展,有助於賽夏 族文化之復振與保存。

(二)主題演講:「對話原住民知識與現代科學—台灣 ISSTP 計畫的 跨文化合作經驗 (Indigenous Knowledge and Climate

Adaptation: Bridging Cultural Wisdom with Scientific Research)」一官大偉教授

官大偉教授於主專題演講中發表國科會「原住民族社會永續科技發展平臺計畫」(ISSTP)的研究核心,就是促成臺灣原住民知識和現代科學對話,形成政府、學界、部落三方的協力機制,並回應原住民族社會發展的重要議題。在這次的報告中,

顯現出原民平臺計畫的特色:

1. 政府、學界、部落三方協力機制的建立

學術工作需要長時間的投入和累積,因此既使有所謂公私協力、多方協力的理想,很難實際投入大量時間去促成協力的形成。因此學者在協力機制中,比較難扮演主動積極的角色。在原民平臺計畫中,平臺辦公室針對需要政策落地的議題(例如:原住民坡地利用知識如何結合當代的土地管理中,就需要與國土計畫的主管機關、水土保持的主管機關達成共識)主動地提出會議要求、拜訪並串聯討論,甚至需要串聯其他不同研究計畫的研究者共同向機關提出建議。

2. 強調部落走讀的研究方法

原住民知識有其不同於現代科學的特性,包含強調其知識產生的脈絡,以及其知識學習與傳承的方式,都和地方有關。因此原民平臺計畫強調研究者必須進入部落,在部落的場域中見識及學習。在過程中,知識的擁有者也成為主動展現與詮釋原住民知識的角色,這樣的研究方法具有翻轉知識生產、權力關係的意義。

3. 嘗試發展系統科學和原住民知識對話媒介

經過實際研究的經驗,再加上原民平臺中不同子計畫的對照,平臺辦公室提出所謂對話,不是「互相講話」即能達到有效的溝通,而必須有「媒介(medium)以及「媒介的過程」(mediation)。例如,在自然資源子計畫的案例中,建立現代植物學知識的調查與分類以及阿美語植物的分類並陳的資料庫,就成為一個媒介,使得系統科學的知識和阿美族的原住民知識,可以藉由資料庫的建置進行呈現與比較。而資料庫的建置需要不同人力的參與、協調、組織動員、進行活動,讓人力、技術和活動能組織在一起,就是一個媒介過程。透過實踐及學術分析,原民平臺計畫正逐步發展系統科學和原民知識對話的方法。

本研究突顯了原住民知識在生態保育與永續發展中的價值,並透過 ISSTP 計畫展示了如何在學術界、政府與原住民社群間建立對話機制。研究發現,透過有效的「調解」機制(mediation),可以創造新的合作空間,減少權力不對等的知識生產關係,使原住民的環境治理經驗能夠被納入國家政策與學術討論。

(三)主題演講:「推動原住民族傳統知識於科學及政策領域之主流 化(Mainstreaming Indigenous Knowledges for Science and Policies)」—官大偉教授

官大偉教授受邀擔任 3 月 2 日專題演講之主講人,以研究 團隊長期作為原民知識體系中的串聯角色之經驗,提出對於自 然為本的解決方案(Nature-based Solution, NbS)的反思與見解。

官大偉教授所發表的專題,探討如何將 NbS 的理念與原住 民知識導入並主流化於科學社群及制度面,因應近年氣候變化、 環境惡化和生物多元性喪失的情況下,傳統的工程技術已無法 應對上述問題,透過 NbS 可運用自然系統功能,滿足人類社會 需求和解決環境問題。他指出 NbS 不僅涉及「自然」,更具高度 的文化性、社會性與政治性,因此必須避免將「自然」客體化, 而是需更加認識多元的、人與自然的關係。而原住民知識,可 以為 NbS 提供深入見解,並且示範人類和環境,如何透過生活 經驗彼此適應與演化。

同時,原民知識並非靜態不變的,隨著時空演變,透過不 斷實踐,進而轉變。官大偉也向與會來賓,強調原民知識具有 「文化性」、「社會性」、「政治性」:在文化性上,原住民知識反 映不同文化如何影響理解世界的方式,包含對於人類生存、發 展與福祉;也具有社會性,發生在人類群體和社會組織中,透 過應用、傳承,和集體詮釋的方式來運作,時間環境改變時, 知識會透過持續的集體詮釋而演變。

另外,原住民知識的實踐,是需要有「空間」,在空間的概

念裡,除了指出物理空間,也包含人和土地互動的關係空間,以及法律和政策運作的無形空間,法律與政策需肯認原住民族人得以使用自己的生活方式和土地互動的實踐權利。因此也在政治性上,使提醒需反思既有政策與法律是否足以尊重不同族群人與環境之多元性關係,並允許發展、實踐各自原住民知識。

最後官大偉教授結語時提及,作為一個連結學者、社區實 踐者與政府官員的網絡,擁抱多元價值從不是隨意或孤立的行 動,無論是在學術、社會或政策脈絡中,這都需要長期且集體 的努力,也因此每一步進展,都是靠彼此串連與合作而來。

二、國際交流共識

此次會議也聚集不同學科專業的研究者,整合各講者發表內容之大意,梳理會議中具高度共識的三大要點—跨學科合作之必要、在地原住民視角的意義、優化研究倫理指標。

(一) 跨學科合作之必要

自然災害應變與原民知識體系整合的龐大議題中,資料蒐集、開發工具和制定策略等一連串過程顯見跨學科合作之重。 會議中,不同學科背景的學者們除了分享其研究成果和介紹其專業領域之長處外,皆不約而同地在以各自研究背景為題的發表中提及單一學科的侷限性。

考古學者 Miriam Stark 表示該專業在合作中作為輔助角色, 尤以針對早期現代時期(16~18世紀)的挖掘能提供更多在地 視角的史料,她認為過去對於東南亞各方面的研究往往缺乏其 內部社群的自我見解,而如今在區域內若尋求突破性的研究, 考古學致力於考究本地觀點的方向便是能提供的協作貢獻。

環境生態學者 Paul Barber 對太平洋上珊瑚大三角區域遭受生態威脅所提出之應對方法,也強調在生態研究之外,原民傳統智慧與土地管理知識等面向必須一同參與討論。目前該區域的海洋生態威脅,不只是因暖化和沿海汙染,陸上加劇沖刷而

流入海中的泥沙沉積物也導致珊瑚礁上與之共生的藻類無法順利地行光合作用,便是 Paul Barber 之所以呼籲將原民土地資源運用的智慧和研究土地政策的專業融入此議題相關討論的原因。

Kathleen Johnson 則在專題演講的場次,談到氣候研究正面臨的困難在於,氣候預測的變數和未知性太高,在她的古氣候學專業以外,仍需仰賴考古學、歷史學、與當地文化研究等角度所提供的參數,以設計更準確的氣候預測模型。根據專題演講,全球受洪水災害的人口在增加,其中又以東南亞區域為主,因此 Kathleen Johnson 認為,在區域內從事氣候變化脆弱性(Climate change Vulnerability)研究,勢必得兼顧跨學科合作以及對區域當地研究人員的培育養成。

(二) 在地原住民視角的意義

關於在地原住民視角的意義,幾位學者分享的案例也讓我們得以順著文化脈絡看見原居族群文化中的初民科學和韌性。學者 Ma. Riza Lopez 所分享的案例是民答那峨島上阿古桑沼澤保育區的 Manobo 人社區,此地區被指定為東協遺產公園,當地住民強烈的地方感促使他們留在當地生活且發展出高度的社會生態韌性。Manobo 人社區的建築型式因應了定期遭遇水面上漲的沼澤環境,在洪水季之前,他們透過耕作儲備糧食,洪水到來之後,形成的湖泊就是他們的漁場,因此洪水對他們來說反而是一種餽贈。在這樣的生活環境中,Manobo 人建立的認同與「水」密切相關,沼澤環境、洪水上漲是他們與土地的情感連結,也是住民們懂得運用的生活資源。這些生活在生態保育區的居民組成志願性的巡守隊,根據講者在地幾年的調查數據,顯示在區域內的非法活動隨之減少。本案例顯示了生態保育工作與居民生活取得共好、平衡的可能性,也說明「地方感」不僅是居民對土地的情感依賴,更能作為社區永續發展的驅力。

另外兩個案例分別來自巴丹群島的原住民伊萬特人,以及 塔巴望島(位於婆羅洲東側海灣)的巴瑤族。颱風是巴丹群島最 大且定期遭遇的災害,常造成自然資源與作物大量被破壞,在 這樣的環境下,伊萬特人發展出應對飢荒期的飲食文化,他們會將豬肉和豬皮曬乾儲備,在糧食短缺時,將曬乾的肉類、膠質與芋頭葉、蕨類、熱帶蕉等搗碎混合,再燉煮成主食。學者Francisco Datar 觀察到,雖然如今當地的主食也已從根莖作物轉變成米飯、麵條,但傳統仰賴的主食資源,例如芋頭,以及因應颱風而發展出飢荒期的菜餚,仍在當地人的飲食文化中保有重要地位,常在節慶和宴會上成為特色的菜餚。伊萬特人傳統上的糧食韌性與對食材的高度利用率仍然在現代化的當地飲食中具意義和影響力,是一個文化脈絡中展現災害韌性並且在現代化過程中保留、轉演成特色的案例。

學者 Almudi Luckman 分享巴瑤族的案例,展現出在現代科學的知識體系之外,我們未知卻值得延續與學習的初民智慧。 巴瑤族的海洋實踐以觀星航海和造船為主,不需指南針或任何 現代科技裝置,他們能依靠觀星在海上判斷方位,透過辨別星 座判斷出海捕魚的時機和適合航行的季節,星象也是他們預知 季節性天氣變化的信號。不過,巴瑤人的案例相較於 Manobo 人 和伊萬特人,更讓在當地從事田野的學者擔憂,因為這些傳統 知識體系在長者老去及現代化浪潮之下正面臨消亡的危機。

(三)優化研究倫理的指標

優化研究倫理的指標,以學者 Kathleen Johnson 的發表最能具體地將其概念化。Kathleen Johnson 也擁有地球科學領域的學術身分,她從地球科學研究對原住民社區的剝削切入,強調研究倫理的精神,展示了供 STEM 研究參考的研究倫理模型。該模型是由 Dominique David-Chavez 教授設計、提倡,其核心價值強調研究團隊與當地社區的互惠性、謙遜的研究精神、對當地社群的尊重、正直的研究手法。講者和她分享的模型研究精神期待透過實踐研究倫理,達到總體利益,總體利益尤其包括當地社群的研究貢獻被認可、當地社群對研究資料和數據的主權受尊重、當地的自決權被支持、以及持續性的研究與互惠關係。

肆、會後交流情形

此次由林業保育署及南庄賽夏蓬萊部落共同進行專題演講,引起會場中的與會者高度關注,在隨後的問答環節及會後時間亦提出許多問題、心得與回應,亦有多方表達未來希望赴臺進行實地交流與田野考察的強烈意願。過往臺灣對於自然資源共管議題,一向是從美國、澳洲、紐西蘭、加拿大等大國的經驗來取經。此次在 SEACARE 國際會議中的發表顯示,臺灣自身的實踐模式也具備被國際關注與借鏡的潛力。從討論現場的互動來看,南庄部落的共管案例受到與會者特別重視,關注的焦點主要集中在幾個面向:

一、 政府的推動態度與合作模式是成敗關鍵

國際中大部分的原住民經驗,政府都是站在原住民的對立面或是抗爭的對象,但在臺灣南庄共管的案例中,林業保育署在尊重部落及建立信任關係的前提下積極促成提升部落經濟的方案,例如:南庄橙產品的研發和應用、養蜂的方法及蜂蜜的萃取及銷售、合作社參與人工林植林伐林的機制、生質能源的研發等,這都需要政府對於經費、技術引入的支持,對於臺灣政府主動投入,並透過法規與政策調適建立可行制度,與會者多表示讚賞與認同,並提出進一步合作交流之意願。

二、 部落以正式組織推動合作具其可行性

以南庄蓬萊部落的經驗,顯示合作社可作為政府及部落內部溝通的橋樑,一方面與政府相關政策制度銜接,一方面保有部落的主體性。此外,部落領導者在組織與動員部落族人的同時,如何建立公共性及公平合理制度也是關鍵之一,方能建立部落長期穩定性,並有助於建立部落與政府之互信關係。多數與會者於交流時多提出相關疑問,並期待未來能有機會可實際踏訪部落,深入學習與探討的可行的方式。

三、 學界投入知識與方法學的建立

在 SEACARE 的網絡中,有學者及 NGO 的工作者,也有對於社會實踐和政府決策有一定影響力的人士。在南庄共管機制案例的發表後,與會者也思考如何將這樣的經驗應用在各自國家中,但各國的脈絡也都有不同之處,包含政策、族群關係、地理條件、資源狀態等皆有差異,如何將共管核心的精神應用在各自國家,其實需要轉換。在轉換中,學界如何協助進行比較研究,以及根據在地脈絡形成共管的方法,就是一個重要的關鍵,也是與會者期許在未來的學術網絡中,能持續進行探討的議題。

伍、 會場交流紀實



圖 1 SEACARE 官方大合照



圖 2 SEACARE 主辦單位於會議結束前感謝各機關單位的參與,包含林業保育署與苗栗縣賽夏族原住民林業暨勞動合作社



圖 3 SEACARE 主辦單位致贈感謝狀予林華慶署長、根誌 優理事長及官大偉教授



圖 5 林華慶署長分享與賽夏族共管森林資源合作的經驗



圖 7 南庄賽夏族林業合作社主席根誌優長老分享部落與 政府機關合作的經驗



圖 9 來自世界各地與會學者參與研討會,臺下專心聆聽



圖 4 林業保育署、苗栗縣賽夏族原住民林業暨勞動合作 社及政大團隊於會場合影



圖 6 林華慶署長分享臺灣具高度生物多樣性,管理的森林共有九成是原住民族的傳統領域



圖8政大民族學系官大偉教授回應與會學者提問



圖 10 臺灣代表團攜帶里山賽夏段木菇、森林蜜、山精油、繪本等林下經濟產品與會分享



圖 11 林華慶署長向國際學者介紹原住民生態繪本讀物《苔 蘚兄妹》



圖 12 根誌優理事長和官大偉教授向與會學者分享林下經濟產品。



圖 13 與 Pangasinan Polytechnic College 校長 Dr. Raymundo Rovillos 合照



圖 14 與 Partido State University 校長 Dr. Arnel B. Zarcedo 合照。



圖 15 會後聚集來自 partido state university 的與會學者,與臺灣代表團一同交流



圖 16 官大偉教授進行 Natural-based solution 演講



圖 17 臺下與會學者專心聆聽畫面



圖 18 Longacre's Legacy: Ethnoarchaeology and Studies on Philippine Earthenware 開幕式





圖 19「Longacre's Legacy: Ethnoarchaeology and Studies on Philippine Earthenware」展覽及現場陶瓷製作











圖 20 臺灣團員於會場外交流情形

陸、心得與建議

一、 會議觀察心得

透過此次實際參與 SEACARE 會議,可觀察到此網絡係由 幾位核心成員長期主導帶動,特別以 UCLA 為主要樞紐,串聯 菲律賓的學術社群,並與政大臺菲科研中心 CTPILS 建立了穩 固的合作關係,構成一個持續運作且穩定發展的跨國學術網絡, 以菲律賓為核心,向外擴展至柬埔寨、越南、泰國、印尼、緬 甸、臺灣等國,形成涵蓋多國的區域研究網絡。研究主題橫跨 考古學、地理學、地球科學與生態學,聚焦於人類與生態系統 長期互動的歷史經驗,並以此思考因應氣候變遷的可能途徑。 臺灣自網絡初期即積極參與其中,成為臺美菲網絡中的元老級夥伴,展現出臺灣在東南亞跨國學術合作中的重要角色與貢獻。

臺灣代表團實際與會分享「臺灣原住民傳統領域與資源共同治理之探討」專題,深刻感受到臺灣在原住民族與政府之間共管機制的實踐成果,正逐步引起國際社群的高度關注。特別是在會後的問答與交流時間,許多來自不同國家的學者對於南庄賽夏部落與林業保育署攜手推動共管制度的經驗表達出濃厚與趣。以往國際上討論自然資源共治議題時,常以美、澳、紐等國的案例為主,但這次的演講讓與會者意識到臺灣的實踐模式也具有高度參考價值,甚至提出實地訪查的意願。此次演講不僅展示了臺灣在共管實務上的成就,更在國際交流層面引起了具體回響,顯示出臺灣在原住民族與自然資源治理議題上的潛力與影響力正逐步擴展至全球視野,並作為日後推動跨域合作的重要基礎。

二、後續推動建議:

(一) 深化與國際學術網絡的夥伴關係,強化對外連結

SEACARE 的學術網絡已有其穩定基礎,我國政治大學的 CTPILS 長期與該網絡交流合作,建議臺灣相關政府部門(如原 民會、林業保育署等)可評估與相關組織共同設計長期交流機 制,整合研究、政策與實務,透過聯合研究、跨國工作坊與人 才交流等方式,強化臺灣在國際原住民與環境議題中的重要性 與貢獻度。

(二) 積極將臺灣自然資源共管實務經驗與國際分享

我國近年推動自然資源共管與永續利用,其推動模式緊密扣合聯合國生物多樣性公約推動目標,並已逐步累積資源共管之實務經驗,建議可積極透過各式機會與國際交流分享,以臺灣經驗作為國際推動自然資源管理與原住民發展議題之參考解方。惟若僅靠會議分享,資訊擴散度與效益較為有限,建議可評估將相關經驗與案例彙整公開,如:製作多語版教材、影音

資料與數位資料庫等,以利透過各式外交手段進行推廣,並促進更深度的國際交流,將臺灣經驗轉化為具示範意義的治理模式。

(三) 以既有學術網絡為支持,推動自然保育的「新南向政策」

臺灣原住民與南島語系民族的文化脈絡及傳統智識具高度關聯,且我國自然資源的環境條件也與菲律賓、印尼、越南等國較為相近,建議可以 SEACARE 與 CTPILS 串聯之學術網絡為基礎,透過雙邊或多邊合作機制,針對森林治理、傳統知識保存、氣候變遷調適、文化經濟等議題展開交流,推動自然資源保育的新南向政策,強化臺灣在南向國家的「專業分享者」角色,並促進區域性政策影響力。

柒、 附件

附件一、研討會日程及講者介紹

Schedule: Collaborative and Integrative Climate Research in Southeast Asia

Schedule Highlights

Expected Arrival at Ninoy Aquino International Airport (Manila) February 27, 2025

Check-in at Red Planet Manila Aseana City Lot 38 Block 2, Bradco Avenue, Aseana City, Paranaque City 1700, Philippines (See Accommodation List for detailed instructions)

Depart Red Planet Manila Aseana City at 11:30 AM February 28, 2025 to Ninoy Aquino International Airport (Terminal 2)

> Land travel from DRP to Naga City Check-in at Villa Caceres Hotel

Magsaysay Ave, Naga City, Camarines Sur, 4400 (See Group Travel section for detailed instructions and Hotel Accommodation list)

Welcome Dinner and Book Launch Venue: Savage Mind: Arts, Books, & Cinema 5 Peninsula St., Naga City, Camarines Sur, 4400

SEACARE Workshop Day 1 Workshop Dinner March 1, 2025

Venue: Villa Caceres Hotel

Magsaysay Ave, Naga City, Camarines Sur, 4400

Longacre's Legacy: Ethnoarchaeology and Studies on Philippine Earthenware Venue: Museo de Isarog, Partido State University Goa, Camarines Sur, 4422 March 2, 2025

SEACARE Workshop Day 2 Venue: La Vista Prima Events Center

Goa, Camarines Sur, 4422

SEACARE Workshop Day 3 and Writeshop Venue: Katha Glass Beach House March 3, 2025

Siruma, Camarines Sur. 4427

Premier Showing: Mga Nakabuhing Agi-agi Venue: Kamarin Art Gallery 5 Peninsula St., Naga City, Camarines Sur, 4400

Depart Villa Caceres Hotel at 8:30 AM travel tour March 4, 2025

Albay, a quick visit to Cagsawa Ruins/National Museum Bicol

(A shuttle will be provided for some participants who will depart from Nega to DRP and van transportation from NAIA Terminal 2 to Red Planet Manila Aseana

Check-in at Red Planet Manila Aseana City Lot 38 Block 2, Bradco Avenue, Aseana City, Paranaque City 1700, Philippines

(See Accommodation List)

March 5, 2025 Return to Home

Join our WhatsApp Group Chat: https://chat.whatsapp.com/Ekb9O6hOSJmA3o6EacBY4e Contact Karen Artiaga (+63 9175034306) or Earl John Hernandez (+1 31069693695)

Keynote Address 2:

Mainstreaming Indigenous Knowledges for Sciences and Policies

KEYNOTE SPEAKER

Da-wei Kuan

National Chengchi University



Daya (Da-Wei Kuan) is the Professor/Chair of the Department of Ethnology at NCCU, also the Executive Director of CTPILS (Taiwan-Philippines Science and Technology Innovation Center for Indigenous Knowledge, Local Knowledge and Sustainability Studies). He comes from the Tayal indigenous group in Taiwan, received his PhD degree in geography from the University of Hawaii at Mānoa. His research interests include: indigenous geography, indigenous land policy, indigenous community mapping, and community-based resources management. Devoting to integrate his works of academic research, teaching and community service for the claim of indigenous land rights, he collaborates with different indigenous communities in many traditional territory mapping, land-use planning and community development projects. In addition to the fieldworks in Taiwan, Daya also commits himself to the comparative studies and collaborations within the Austronesian language-speaking peoples in Southeast Asia and the Pacific.

BIONOTES: Plenary Session 1

Transdisciplinary Research in Southeast Asia: Bridging Climate Science, Archaeology, and Indigenous Knowledge

MODERATOR

Stephen Acabado University of California, Los Angeles



Stephen Acabado is a Professor of Anthropology at the University of California, Los Angeles, where he also serves as the Chair of the Archaeology Interdepartmental Program and Director of the Center for Southeast Asian Studies. He earned his Ph.D. in Anthropology from the University of Hawai'i in 2010. As an anthropological archaeologist, Dr. Acabado focuses on human-environment interactions and indigenous responses to colonialism, with a particular emphasis on Southeast Asia. His research on the Ifugao rice terraces in the northern Philippines has challenged earlier beliefs about their antiquity, suggesting they were constructed as a response to Spanish colonial pressures rather than being over 2,000 years old.

He advocates for engaged archaeology, involving descendant communities in the research process. He directs the Ifugao Archaeological Project and the Bicol Archaeological Project in the Philippines, and collaborates on the Taiwan Indigenous Landscape and History Project and more recently Mountain Ecology and Agricultural Systems in Morocco. His work contributes to understanding agricultural systems, indigenous resilience, and the impacts of colonialism in Southeast Asia. Taiwan, and North Africa.

PANELISTS

Miriam Stark University of Hawai'i at Manoa

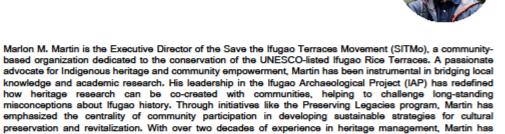


Miriam T. Stark (Professor, Anthropology, University of Hawai'i at Mānoa, Hawai'i) has worked in Southeast Asia since her 1987-1988 PhD ethnoarchaeological research in Kalinga Province, Philippines, and co-directed archaeological field projects since 1996 in collaboration with Cambodia's Ministry of Culture and Fine Arts and APSARA Authority. Two current projects, P'teah Cambodia (co-director: Dr. Alison Carter, University of Oregon, USA) and the Khmer Production and Exchange Project (co-directors: Dr. Peter Grave, Dr. Lisa Kealhofer, and Dr. Ea Darith), examine Angkorian-period residence and economy. A third, "Of Water, Crocodiles, and Kings: Co-Producing Kuy History in the Prey Lang Forest, Cambodia" (co-director: Dr. Courtney Work) develops oral histories of traditional Indigenous places in collaboration with Kuy descendant communities. Her work blends research with capacity-building and includes heritage management in their long-term research designs. She has published broadly in archaeology and heritage management, focusing on Southeast Asia and – more recently – building interdisciplinary environmental histories.



I am an assistant professor at Brown University in Earth, Environmental and Planetary Sciences jointly appointed in the Institute at Brown for Environment and Society. I recieved my PhD in Earth System Science in 2018 from Stanford University. I am a geochemist and climate scientist working on the carbon and water cycles. I am a Filipino-American and was a DOST Balik Scientist in 2019 hosted by Prof. CP at UP Diliman (NIGS/IESM), and since then have collaborated on hydrology, weathering, karst and paleoclimate projects in Palawan, Cagayan, and Zambales.

Marlon Martin Save the Ifugao Terraces Movement



Ruel Pagunsan University of the Philippines - Diliman



Ruel V. Pagunsan is an associate professor at the Department of History, University of the Philippines Diliman. His research focuses on the history of science, nature making and nationalization of ecological spaces. He holds a PhD in History at the National University of Singapore and was a research fellow at the Center for Southeast Asian Studies, University of Michigan in 2014. He was also a recipient of the Young Historian's Prize of the National Commission for Culture and the Arts. He has published articles in journals such as the Philippine Studies: Historical and Ethnographic Viewpoints and the Journal of Southeast Asian Studies.

contributed to national and international dialogues on Indigenous knowledge systems, climate adaptation, and the intersections of cultural and environmental sustainability. His work exemplifies the transformative potential

of community-driven approaches to archaeology and heritage conservation.

BIONOTES: Plenary Session 2

Sustainable Futures:

Agriculture, Ecosystems, and Marine Resources in a Changing Climate

MODERATOR

Raul Bradecina
Partido State University



PhD in Environmental Economics as DOST-JSPS Ronpaku Fellow. Completed MSc in Ocean Science, and BS in Fisheries (Aquaculture). Working on value chain analysis of selected commercially exploited fishery resources in the Philippines, economic studies of fishing operations in Lagonoy Gulf, analysis of policy incentives for sustainable tuna fisheries, behavioral economics of resource users in marine protected areas, indigenous knowledge of fishers and social capital towards sustainable utilization of open access fishery resource and climate change adaptation, economic valuation of coastal ecosystem services towards payment for ecosystem services (PES), blue carbon foot print reduction estimation in small scale fisheries for blue economy, economics of climate change impact adaptation strategies in coastal communities, socioecological and economic impacts of typhoon on mangrove rehabilitation areas, small scale fisheries governance for poverty alleviation and food security, ex-ante analysis of Philippine mussel aquaculture technologies, assessment of aquaculture in Partido District, morphometrics, ecology and diversity of riverine shrimps in key biodiversity areas of Bicol, behavioral toxicology of siganid fishes to coastal effluent, and tourism development planning. Has been engaged in university administration as an academic leader, in management of research and community extension projects, and in institutional development planning. An advocate of sustainable rural development, a creative writer in local dialect and a Bikolano poet with interest in Eco poetry.

PANELISTS

Julie Hoggarth

Baylor University



Julie Hoggarth is currently an Associate Professor at Baylor University whose research focuses on environmental archaeology. Much of her fieldwork takes place in Belize, where she builds radiocarbon chronologies to examine the link between climate change and societal transformations of the ancient Maya. She is also on the steering committee of the PAGES PEOPLE 3000 (PalEOclimate and the PeopLing of Earth) group, where she has been collaborating with colleagues from around the world to build dynamic models that explore the links between climate change and societal resilience.





Paul Barber is a professor of Ecology and Evolutionary Biology at UCLA. He studied Ecology and Evolutionary Biology and Music at the University of Arizona, and then earned his PhD from UC Berkeley. After a postdoctoral fellowship at Harvard he joined the faculty at Boston University before moving to UCLA in 2008. Paul's research program integrates genetics, genomics, ecology, and oceanography to understand the evolution of marine biodiversity, and uses this information to promote marine conservation, particularly in the Coral Triangle. Paul's integration of research and education and passion for mentoring has been recognized by numerous awards, including the U.S. Presidential Early Career Award for Science and Engineering, the UCLA Distinguished Teaching award, and the SACNAS Distinguished Student Mentor Award. In 2017 he was named an HHMI Professor, and in 2020 was elected to the California Academy of Sciences.

Matrii Aung-Thwin National University of Singapore



Maitrii AUNG-THWIN is Associate Professor of Myanmar/Southeast Asian history and Convener of the Comparative Asian Studies PhD Program at the National University of Singapore. His current research is concerned with law, resistance, and knowledge production in South and Southeast Asia. His publications include: A History of Myanmar since Ancient Times: Traditions and Transformations (2013), The Return of the Galon King: History, Law, and Rebellion in Colonial Burma (2011) and A New History of Southeast Asia (2010). He is a Burma Studies Foundation trustee (USA), Deputy-Director of the Asia Research Institute, and editor of the Journal of Southeast Asian Studies.

Norman King



A former Instructor in Pampanga State Agricultural University - Magalang, Pampanga. Acting Indigenous Peoples Organization - Chairman of Porac Ayta group in Pampanga. Currently doing ongoing ethnographic documentation about the Ayta of Porac - Origin, Culture, and Politics. A photography enthusiast.

Czarina Macatingrao
Partido State University



Ms. Czarina Nicole E. Macatingrao is a dedicated Biology instructor at Partido State University in Goa, Camarines Sur, Philippines. She earned her Bachelor's Degree in Biology, majoring in Microbiology, from the University of the Philippines Los Baños and is nearing completion of her Master's in Biology at De La Salle University Manila. Alongside her academic endeavors, she is passionate about biodiversity conservation and interested in how indigenous knowledge can be integrated with modern technologies to protect natural ecosystems.

BIONOTES: Special Session

Conversation on Co-Stewardship of Indigenous Landscape and Resources in Taiwan

MODERATOR

Da-wei Kuan

National Chengchi University



Daya (Da-Wei Kuan) is the Professor/Chair of the Department of Ethnology at NCCU, also the Executive Director of CTPILS (Taiwan-Philippines Science and Technology Innovation Center for Indigenous Knowledge, Local Knowledge and Sustainability Studies). He comes from the Tayal indigenous group in Taiwan, received his PhD degree in geography from the University of Hawaii at Mānoa. His research interests include: indigenous geography, indigenous land policy, indigenous community mapping, and community-based cources management. Devoting to integrate his works of academic research, teaching and community service for the claim of indigenous land rights, he collaborates with different indigenous communities in many traditional territory mapping, land-use planning and community development projects. In addition to the fieldworks in Taiwan, Daya also commits himself to the comparative studies and collaborations within the Austronesian language-speaking peoples in Southeast Asia and the Pacific.

PANELISTS

Chih-You Ken Miaoli County Saisiyat Indigenous Peoples Forestry and Worker Limited Liability Cooperative

Elder KEN Chih-You promoted the cooperation between the Saisiyat people and the Forestry and Nature Conservation Agency to unite the centripetal force of the tribe to establish the "Misoli County Saisiyat Indigenous Peoples Forestry and Worker Limited Liability Cooperative ", leading the Saisiyat people to participate in community forestry projects, establish a forest disaster prevention guardian team, develop diversified green forest industries, effectively boost the tribal economy, develop forest healing and revive the traditional mountain village culture. Promote the restoration of the endangered plant "Citrus Taiwanica (Nanzhuang Orange)", and promote Saisiyat Satoyama practice to the international stage and become a model of excellence.

Hwa-Ching Lin
Forestry and Nature Conservation Agency, Taiwan

林華廣博士現任林業及自然保育署署長。身為我國林業及生態保育主管機關,林署長致力於森林及其他陸域生態系的永續經營管理,以維護生物多樣性資源及生態系服務,並將其惠益,公平合理地分享給所有權益關係人,以促進倚賴森林生活者的生計。在他的領導下,林業保育署成立原住民族自然資源共管平台,推動林下經濟,倡議使用國產材,並推動「國土生態保育綠色網絡建置計畫」,以實現人與自然和諧共生的目標。

Dr. Hua-Ching Lin is the current Director-General of the Forestry and Nature Conservation Agency. As the head of Taiwan's forestry and ecological conservation authority, Dr. Lin is dedicated to the sustainable management of forests and other terrestrial ecosystems to maintain biodiversity resources and ecosystem services, and to equitably and reasonably share the benefits with all stakeholders to promote the livelihoods of those who depend on forests. Under his leadership, FANCA has established a co-management platform for indigenous peoples and natural resources, promoted understory economy, advocated for the use of domestic timber, and launched the "Taiwan Ecological Network (TEN)" to achieve the goal of harmonious coexistence between humans and nature.

BIONOTES: Panel Discussion 1

Methodological Approaches to Long-Term Climate Resilience in Southeast Asia

MODERATOR

Robert Eagle
University of California, Los Angeles



I work at the Institute of the Environment and Sustainability at UCLA, my group works on Climate Change impacts from both the perspective or organismal biology but also coastal ecosystems through the lens of both geochemistry, functional genomics, and environmental genomics.

PANELISTS

Almudi Lukman Western Mindanao State University



He finished his BS Forestry (Cum Laude) at Western Mindanao State University as Academic Scholar (1994). He also graduated with the degrees in Master of Public Administration (1999) and Juris Doctor (2006) in the same University. He finished his MS in Forestry at the University of Idaho, USA as a Fulbright Scholar (2004). He pursued and completed his doctorate studies leading to the degrees in PhD in Development Management at the Ateneo De Zamboanga University (2016), and PhD in Sustainable Development Studies at MSU-Iligan Institute of Technology as CHED Scholar (2020).

He had served as Chair of the Department of Forestry and Agroforestry. Presently, he is the Dean of the College of Forestry and Environmental Studies, Western Mindanao State University, Zamboanga City since 2020 holding an academic rank of Professor VI, and Head of the Climate Change Research Center.

Danilo Gerona Partido State University



Filipino historian and academic, recognized for his extensive research on the early Spanish colonial period in the Philippines. A graduate of Ateneo de Manila University, Gerona has delved deeply into both Philippine and European archives, focusing on key aspects such as the early Spanish conquest, the Christianization efforts, and the galleon trade. His scholarly contributions are widely regarded, with numerous books to his name, including a highly acclaimed work on the Magellan expedition, which garnered international recognition. Throughout his career, Gerona has shared his expertise with global audiences, delivering lectures at academic conferences across the Philippines, Asia, and Europe, further solidifying his reputation as a leading authority in his field. He is currently the Director for the Center for Partido Studies and a faculty of history at the College of Arts and Humanities at the Partido State University.





Biological anthropologist, Field School Director for more than 15 field schools in the islands of Bagatao, Magallanes, Sorsogon; Batan Island of Batanes; Capul Island of Northern Samar.

Also held field school in Ifugao and Benguet. Did ethnographies of my 3 Island communities with special focus on seasonality, fishing, farming, and food evolution.

Darwin Plaza Partido State University



Darwin Pillogo Plaza is a faculty member of the College of Education of Partido State University, where he teaches Indigenous Peoples Studies, Peace Studies, and major subjects in Filipino language and literature. As a trained cultural mapper his research interests are in traditional and Indigenous knowledge and have conducted studies in these areas. He has been presenting studies in national and international research conferences.

BIONOTES: Panel Discussion 2

Indigenous Knowledge and Climate Adaptation: Bridging Cultural Wisdom with Scientific Research

MODERATOR

Raymundo D. Rovillos

Pangasinan Polytechnic College



Dr. Raymundo D. Rovillos is a Professor of History and former Chancellor of University of the Philippines Baguio from 2012-2021. An esteemed scholar, he has published articles in peer-reviewed journals, books and book chapter on Tinguian/Abra ethnohistory, indigenous peoples' development, rights and identity politics, gender and development and social development. As former Chancellor of UP Baguio, Dr. Rovillos was able to sustain the transformation of UP Baguio as a premier university in the arts and sciences, particularly in the field of Cordillera and Indigenous Studies, Sustainable Science and Governance. He is a recipient of the 2013 Asian B-School Award for outstanding contribution to education. He is currently the Interim President of Pangasinan Polytechnic College (PCC).

PANELISTS

Da-wei Kuan National Chengchi University



Daya (Da-Wei Kuan) is the Professor/Chair of the Department of Ethnology at NCCU, also the Executive Director of CTPILS (Taiwan-Philippines Science and Technology Innovation Center for Indigenous Knowledge, Local Knowledge and Sustainability Studies). He comes from the Tayal indigenous group in Taiwan, received his PhD degree in geography from the University of Hawaii at Mānoa. His research interests include: indigenous geography, indigenous land policy, indigenous community mapping, and community-based resources management. Devoting to integrate his works of scademic research, teaching and community service for the claim of indigenous land rights, he collaborates with different indigenous communities in many traditional territory mapping, land-use planning and community development projects. In addition to the fieldworks in Taiwan, Daya also commits himself to the comparative studies and collaborations within the Austronesian language-speaking peoples in Southeast Asia and the Pacific.



Etty Indristi, Ph.D. (Fulbright scholar, graduated from the University of Chicago, 1998) and currently Professor of Anthropology affiliated with the University of Gadjah Mada Post Graduate Program, Center for Religions and Cross-Cultural Study. I teach Indigenous Religions. My current interest covers material culture in religions, ecology and indigenous religion. I was the Director of Cultural Diplomacy in the Ministry of Education and Culture in 2012 in Indonesia, leading a team to bring Subak rice terraces of paddy field in Bali be inscribed by UNESCO as the World Heritage. I collect and study traditional textiles i.e handmade/handwoven cloth as they are an integral part of indigenous people's life; they use them as offerings and wear them as costume during rituals performed to maintain harmony with nature/their customary forest, their social cohesion and social identity.





Michael Griffiths is a professor of environmental science at William Paterson University of New Jersey, USA. Michael completed his B.S. in Geosciences at the University of Wollongong in 2004, his M.S. in Geosciences at the University of Massachusetts in 2008, and Ph.D. in Physical Geography at the University of Newcastle (Australia) in 2010. He did his postdoctoral work at the University of California Irvine where he was a NOAA/UCAR Climate and Global Change Postdoctoral Fellow. His research interests can be divided into two key areas: (1) the first is centered around the use of geochemical tracers preserved in sedimentary archives to explore past changes in Earth's climate; (2) the second is primarily focused on utilizing climate model simulations to assess mechanisms, test hypotheses, and in turn help to answer fundamental questions in climate science. His work has been published in prestigious journals including Science and Nature, and has been featured in media outlets around the world, such as The New York Times, National Geographic, CNN, and BBC.

Ma. Riza Lopez
Agusan del Sur State College of Agriculture and Technology



Ma. Riza C. Lopez is completing her Doctor of Philosophy in Environmental Science at the University of the Philippines Los Baños (UPLB), Laguna, working on her dissertation entitled, 'Social-Ecological Resilience of Floating Tribal Communities in Agusan Marsh Wildlife Sanctuary, Mindanao, Philippines'. She is an Associate Professor III at the Agusan del Sur State College of Agriculture and Technology (ASSCAT), Bunawan, Agusan del Sur.

She is a Forester and a Licensed Environmental Planner. As a native of Agusan del Sur with Manobo ancestry, her research interests lie in environmental science and indigenous knowledge systems, specifically toward sustainable land management practices and climate resilience. She aspires to contribute towards collaborative approaches to environmental challenges that adhere to scientific rigor and cultural heritage.

BIONOTES: Panel Discussion 3

Disaster Risk Reduction and Integrative Approaches for Southeast Asia

MODERATOR

Mitsuhiko A. Takahashi University of Toyama



My field of study is environmental law with focus on wildlife, natural resources, and agriculture. Professor of Law at University of Toyama, and Research Associate of the Centre for Indigenous Rights and Law, Auckland University of Technology. I work with the people in rural Japan on wildlife issues and serve as the Chair of the Wildlife Commission of the Toyama Prefecture. I am also interested in indigenous peoples' issues worldwide especially in relation with natural resources.

PANELISTS

Robert Alexander
Independent Scholar



Dr. Bob Alexander (https://rirmc.barefootbob.net) is an independent researcher, trainer, consultant, RCCE/SBCC specialist, and music/film recording artist/producer who has worked on participatory integrated vulnerability reduction and resilience strengthening in areas prone to disaster, conflict, climate change, and maldevelopment related risks for over 30 years. His work focuses on prospective risk-managed community-based ormunity-based risk management and community-based adaptation; sustainable livelihood, food, nutrition, and social service security; integrated socioeconomic vulnerability identification, analysis, assessment, and reduction approaches focused on knowledge co-creation between internal/local and external stakeholders; and effective risk communication and community engagement approaches, including uses of locally relevant participatory communication tools to encourage dialogue, decision-making, and action for disaster preparedness. Although he has been working primarily in Africa in recent years, his initial research was in Bicol and his initial publications and many years of work across Southeast Asia focused on the topic Disaster Risk Reduction and Integrative Approaches for Southeast Asia

Christian Rivero



Christian E. Rivero is a lawyer, Environmental Planner, educator, and Disaster Crisis Manager with extensive experience in public service and education. He currently serves as Director IV at the Department of Education, where he oversees the Sites and Titling Office, ensuring legal and sustainable land use for public schools. Previously, he held the role of Director for the Disaster Risk Reduction and Management Service (DRRMS) at DepEd, where he led initiatives to enhance school safety and resilience. Christian also was connected with the Commission on Higher Education, bringing a wealth of expertise in educational policy and administration. In addition to his public service, he is an active educator, teaching graduate-level courses at various universities.



Amiel Lopez is passionate about fostering inclusive environmental initiatives and social justice through anthropology, education, research, and development work. He is an Assistant Professor of the Department of Anthropology - Ateneo de Davao. His research interests are at the intersection of anthropology, climate change, Sama-Bajaus, urbanity, and queer studies. He blends his research into praxis as the Chairperson of DYESABEL Philippines, Inc., a non-profit organization he co-founded in 2018 to co-create inclusive initiatives with and for the Bajau and youth communities.

During his M.A. in Anthropology research, he was awarded a grant from the Association for Asian Studies, Inc., supported by the Swedish government. He studied Environmental Issues and Natural Resource Management at East-West Center, University of Hawai'i, as a YSEALI Academic Fellow in 2019. He has also worked in several capacities in documenting local and Indigenous ecological knowledge in climate change as key in collaborative and integrative DRRM and climate action.





I am Jerali Dela Cruz Rodrigo, Dean of the College of Science, a registered geologist for more than 15 years who have worked with various industries including Mineral Exploration and Mining, the government and the academe. I am a specialist in the field of stratigraphy, sedimentary geochemistry and tectonics dealing with tectonic evolution of the Philippine Islands. I want to share my knowledge on the geological aspects of disaster preparedness based on my experience with my previous affiliation with the Mines and Geosciences Bureau.

BIONOTES: Panel Discussion 4

Marine Ecosystems and Coastal Livelihoods:
Historical Data and Modern Science for Coastal Resilience

MODERATOR

Michael Clores
Partido State University



Dr. Michael A. Clores is currently the Vice President for Academic Affairs (VPAA) of Partido State University and holds an Academic Rank of Professor III. Prior to becoming the VPAA, and is at present acting as the Concurrent Dean of Partido State University - Caramoan Campus. Dr. Clores has Doctorate Degrees in Biology and Science Education from De La Salle University. He is a regular member of the National Research Council of the Philippines (NRCP). As a Biologist, Science Researcher and Educator, among his research interests include marine biology, seagrass ecology, biodiversity, herpetology, biological invasion, evolutionary biology, cognitivist pedagogy, environmental literacy, history and philosophy of science, and alternative paradigms in research. With his background in both inter- and multi-disciplinary researches, combined with his intense passion for teaching and paradigm in research, he is constantly publishing and presenting papers locally and internationally, acting as peer reviewer in many reputable scholarly journals, evaluating research projects and being consulted by various institutions in the conduct of research.

PANELISTS

Robert Michael Di Filippo
University of the Philippines - Diliman



Dr. Di Filippo is an Assistant Professor at the National Institute of Geological Sciences at the University of the Philippines, with interests in groundwater research in vulnerable environs, with a specific interest in the effects of climate change on coastal communities in low to middle income countries. PhD. was completed in water engineering from Loughborough University in the UK; MA in hydrogeology was completed at West Chester University; as well as a B.S. in geology from the University of Rhode Island.

His research area is in the Philippines where he is evaluating the impacts of Saltwater Intrusion on the Freshwater Lens beneath a karst island. The research integrates both quantitative and qualitative research methods. Incorporating water quality, hydro geologic interpretation, geologic and geomorphologic assessment, remote monitoring system technologies and applying GIS and remote sensing observations for environmental characterization purposes. A critical component of the research is assessing stakeholder sentiment regarding water access and availability. His work includes projects in water engineering in low and middle-income countries: Rwanda (Sanitation & Rainwater Harvesting); Uganda (Rainwater Harvesting); Tanzania (Water Supply by Wells); Armenia (Sanitation); El Salvador (Water Supply by Surface Water Extraction); Philippines (Water Supply by Wells) and Haiti (Water Supply by Rainwater Harvesting & Sanitation Design).





Researcher at Research Center for Environmental Archaeology, Maritime Archaeology, and Cultural Sustainability, BRIN-Indonesia. Born on September 9, 1977 in Sidenreng-Rappang, South-Sulawesi, Indonesia. Bachelor of Archaeology, Hasanuddin University (2002), Postgraduate of Archaeology, University of Indonesia (2010). Currently pursuing a doctoral program in anthropology at Hasanuddin University, Indonesia. My broad research interests centre on historical archaeology, landscape archaeology, cultural anthropology, agricultural and environmental history, maritime and trade history, particularly in region of South Sulawesi, Maluku, and eastern Indonesia. My selected publications: "Mystification of Rituals in the Traditional Agricultural System of the Ajatappareng Community, South Sulawesi"; "History of Maluku from the 13th to the 20th Century: the Landscape of Historical Archaeology and Its Changes"; "Kritting of the Relationship of Bugis-Makassar and the Maluku Islands: A Narrative of Diversity"; "Wakatobi Islands: Archaeological, Historical, and Maritime Tradition Perspectives"; and "Lanscape of Pre-Islamic Beliefs: The Rise of Agriculture and Bugis Disapora".

Lilibeth Macrohon Nuño City Government of Zamboanga

Lilibeth M. Nuño is no stranger to public service even at a young age. She comes from a long line of leaders from Taluksangay who has served Zamboanga City for decades. She first began as the SK Chairwoman of Taluksangay in the 90s and then elected as President of the Federation hence becoming an ex officio member of the Sangguniang Panlungsod. After her term, she joined the corporate world as finance officer of their family business, the Metrostonerich Corporation, a position she still holds upto this day. In 2016, she returned to the City Council and held as Chairperson of the Committee on Health. In 2019, she was re-elected for her second term and chaired the following committees: Education, Gender & Development, and Rules & Ethics. In 2022, she was re-elected for her third term, and subsequently elected as Floor Leader. She holds Chairmanship of the Committee on Ordinances and Resolutions, Committee on Health, Committee on Muslim and Cultural Affairs, and the Committee on Ways and Means. Among her landmark ordinances are the passage of the Comprehensive Anti Discrimination Ordinance of Zamboanga City, and the Amended Gender and Development Code of Zamboanga City.

附件二、專題演講簡報

一、 專題演講:「臺灣原住民傳統領域與資源共同治理之探討 (Conversation on Co-Stewardship of Indigenous Landscape and Resources in Taiwan)」—林華慶署長、根誌優理事長





Conflict: National Forests vs. Indigenous Traditional Territories

- 90% of national forests are also traditional Indigenous territories.
- Forest nationalization has long restricted Indigenous land and resource use, creating conflict with the FANCA.
- This has resulted in the gradual loss of traditional knowledge and culture.



Reconciliation

In 2018, the FANCA and the Saisiyat people signed a partnership and held a reconciliation ceremony, initiating joint forest management with the Penglai Saisiyat Community, Nanzhuang.





How to Enable Indigenous Communities to Benefit from Forests and Improve their Economy?

- Starting with Forest Beekeeping.







Restoring Trust with Indigenous Communities

- Inviting Indigenous Participation in National Forest Patrols
 - Community Patrol Teams Formed
 - Illegal Logging Eliminated : Down from 61 cases (2011-2018)
 - · Reduced Litter on Forest Paths













Shifting from Restriction to Sustainable Forest Use

Approach: Honoring Indigenous resource rights and promoting traditional knowledge, we facilitate its integration with modern technology for sustainable, diverse green forest industries.





Diverse Green Forest Industries

- Forest Ecotourism and Forest Therapy



Diverse Green Forest Industries - Under Forest Economy



Diverse Green Forest Industries

- Collaborative Management of National Plantations
- Members from Indigenous community, after training, manages Nanzhuang plantation nurturing and harvesting.
- A world-first: government and Indigenous community secure FSC forest certification together.



Diverse Green Forest Industries

- Integrated Utilization of Forest Resources & Circular Economy

Log 70%



The rest 30 %, Forest Residues was Left in the Logging Site



Diverse Green Forest Industries

Woodcrafts

- Integrated Utilization of Forest Resources & Circular Economy

Forest Residues 30%



Forest resources circular economy demonstration site

Biomass pellets





Diverse Green Forest Industries

- Sustainable and Innovative Use of Biodiversity Resources: The Nanzhuang Orange Industry



Nanzhuang **Orange**

Citrus taiwanica

- Endemic Species of Taiwan
- 1926, first documented in Nanzhuang
- Distribution :
- IUCN Red List









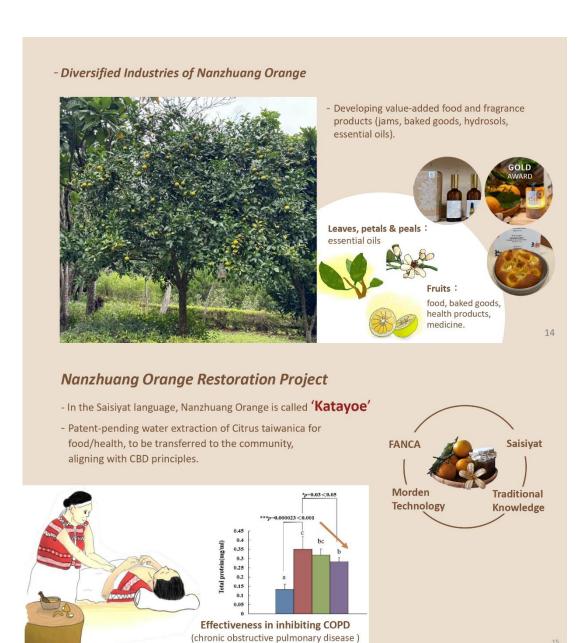


Nanzhuang Orange Restoration Project





Replanting in native habitats



Conclusion

By integrating traditional knowledge with modern technology, we have created sustainable green forest industries that benefit Indigenous communities and renew their connection to the mountains.

Through benefiting from the forest, the community becomes more devoted to its protection, resulting in a triple win for community, forest, and government.







Back in July 2018, we hesitantly took on beekeeping training, unsure if we could trust the Forestry Bureau. We were met with skepticism and mockery within our tribe, and only 7 elderly members, averaging 65 years old, joined us. We were confronted with many problems and nearly disbanded due to financial hardship. Our faith in the policy paid off, and we have grown to 158 members.

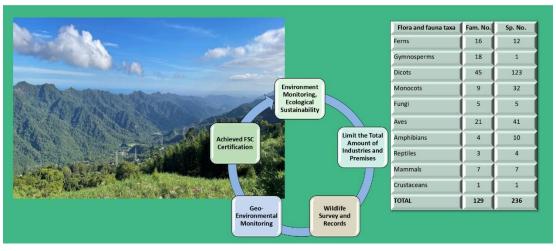






Ecology Comes Before Economy

- Responsible Land Use for Sustainable Community Growth
- Beekeeping
- Shiitake Mushroom Farming
- Indigenous Chicken Breeding
- Therapeutic Potted Plants
- Oil Extraction of Camellia brevistyla
- Using beekeeping as an ecological monitoring tool and indicator, we maintain ecological balance, ensure environmental sustainability, produce small-batch, high-quality, diverse understory economic products, establish brands, and revitalize the local community.
 - Responding to climate change and development: Enhancing habitat conservation for sustainable natural resources





Forest patrol, natural disaster prevention, and wildfire mitigation mechanism was established in 2019. We are proud of returning to the forest and walking on the same trails with our ancestors.





 On April 5, 2023, the national forest around the Saisiyat Tribe was granted the FSC®* certification.



*FSC – Forest Stewardship Council



- China Airlines adopted 18,600 seedlings of Taiwania cryptomerioides and Engelhardtia roxburghiana and planted them on a 7.6 ha plantation (felling areas no. 28, 23, 25, and 27 of forest compartment no.10).
- This initiative reflects the commitment of China Airlines to environmental protection, social responsibility, and forest sustainability as part of its ESG goals.

Saisiyat Community Outreach: We have shared our experiences with tens of thousands of visitors since 2021, including organizations and Indigenous groups, successfully revitalizing our culture



Forest Co-management:

Implementing Circular Economy: Building Capacity and Supporting the Growth of Indigenous Communities



Co-management of Forest

An ideal Outreach Platform – the "Forest Station"



Business and results and resu

On September 20, 2023, we held a press conference to announce the brand image and package design of our tribal brand – 'pakaSan-Harmony between Human and Nature'.



- 🗣 The Miaoli County Saisiyat Indigenous Peoples Forestry and Worker Limited Liability Cooperative (the Saisiyat Cooperative) was established in 2019.
- Through merging tradition with modernity and by establishing a fair, open, and co-sharing business operating system, our aim is to encourage the youth to return to their homeland.



- The Saisiyat Cooperative holds regular meetings every 10th day of each month. Its members discuss and share benefits together. After the meeting, the members receive their remuneration for the previous month and assignments for the upcoming month.
- This operating system truly improves the economic status and livelihoods of tribal members.



ecosystems, promote sustainable land use, and

reverse biodiversity loss.



After becoming a member of the Satoyama Initiative in February 2023, the Saisiyat Cooperative actively engaged in collaboration and promoted the vision of human-nature harmony.



- Nov. 6, 2024: the FANCA, the Penglai Saisiyat Community, and National Chengchi University (NCCU) signed an MOU for establishing the 'PakaSan International Education Base' (Open Forest Classroom).
- Feb. 10, 2025: the FANCA, the Penglai Saisiyat Community, and Ryukoku University create the 'Friendship Forest Exchange Base' by signing an MOU.





Recognizing climate change as a shared responsibility, the Saisiyat commits to forest preservation and living in harmony with nature, contributing to global efforts. We seek to ensure equitable access to forest ecosystem services, fostering a triple win (government, environment, community) that allows our children to thrive in their homeland. This is the heart of Saisiyat sustainability.



To Conserve Forests & Bring Our Children Home

二、 主題演講:「對話原住民知識與現代科學—台灣 ISSTP 計畫的 跨文化合作經驗 (Indigenous Knowledge and Climate Adaptation: Bridging Cultural Wisdom with Scientific Research)」—官大偉教授

Dialoguing Indigenous
Knowledge and Modern
Science, Developing CrossCultural Collaboration:
The Experience of "ISSTP"
Project in Taiwan

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(Taiwan Wildlife Society)

Yu-Yun Chen

(National Dong Hwa University)

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(Tunghai University)

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Liang-Yu Chen

(National ChengChi University)

Naga 2025 SEACARES Workshop



The Background

1. The studies of Indigenous Knowledge in Taiwan context

- --Objectified by colonial anthropology, ignored under post war developmentalism
- --1980s: Democratization/Indigenous movement and land claims
- --2000s: Debates over indigenous resource rights and co-management

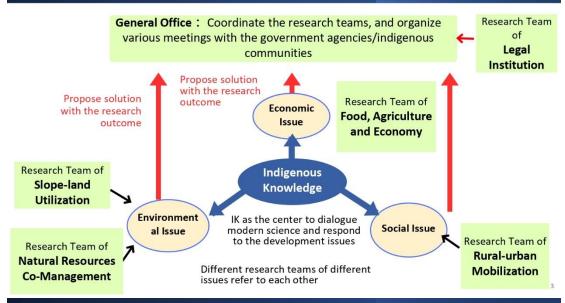
2. Current Challenges

- --Government project for the construction of indigenous knowledge system (2020)
- -- The construction needs to go beyond ethnographic data collection.
- --The application of indigenous knowledge is limited by bureau/scientific complex

3. The Purposes of ISSTP (Indigenous Sustainable Science and Technology Platform)

- --Dialogue indigenous knowledge and modern science
- --Coordinate the researchers/government officers/ indigenous communities
- --Respond to the practical development issues in the society

The Conceptual Framework



The Research Team						
General Office			Prof., Chair, Dept. of Ethnology, NCCU			
Da-Wei Kuan (Daya Dakasi) (Tayal Group)	Ethnologist	PI	Development Geography, Indigenous Land Policy			
Slope-land Utilization Asso. Prof. Pingtung University Studies of Indigenous CulturalDevelopment						
Tiuku Ruljigaljig (Paiwan Group)	Geologist	CO-PI	Applied Geology, Spatial Information Integration and Application Technologies			
Natural Resources Co-mamagement						
Yu-Yun Chen	Botanist	CO-PI	Prof., Dept. of Natural Resources and Environmental Studies, NDHU			
Chia-Chi Pei	Wildlife Biologist	Consultant	Chairperson, Taiwan Wildlife Society			
Shao-Lun Liu	Marine Biologist	Associate-l	Prof, Dept.of Life Science, THU			
Urban-rural Mobiliz	zation	CO-PI	Professor, Depart. of Sociology, NSYSU Economic Sociology			
Hong-Zen Wang	Sociologist	33.1.	Assistant Professor, Depart. of Sociology, NSYSU Feminist Theory			
Mei-Hua Chen		Associate-l	Deliberative Democracy			
Wan-Ju Lee		Associate-l	A Land Control of the Market			
Kui Kasirisir (Paiwan Group)	cial Work Scholar	Associate-l	Prof., Chair, Department of Social Work, NPUST Community Development			
Food, Agriculture and Economy			Indigenous Social Welfare Policies			
Yih-Ren Lin H	umanistic Ecologist	PI	Prof., Graduate Institute of Museum Studies, TNUA			
Legal Institution			Humanistic Ecology and social Practice			
Chu-Cheng Hua	ng Jurist	CO-PI	Prof, Institute of law for science and technology, NTHU Applied Geology, Spatial Information Integration and Application Technologies			

Walking workshop as a way to reveal the oratory/nonverbal knowledge







2022.11.20 Hualian, Tafalong Makotaay







Walking workshop as a way to facilitate transdisciplinary conversation in place





2023.02.18
Pingtong,
Tjalja'avus





Walking workshop as a way for community members to present/interpret their knowledge







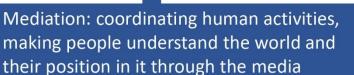


2023.04.08

Hsinchu, Nahuy

Main Purpose of This Presentation

- 1. Take the Research Team of Natural Resources Co-Management as an example
- 2. Demonstrate the process and current outcomes of dialoging indigenous knowledge/ modern science
- 3. Discuss the importance of "mediation" in the dialogue



(Livingstone 2009)

About the Research Team of Natural Resources Co-Management

- Collaboration: Invite local hunter's organizations to participate in natural resources survey and monitoring for adaptive management program.
- 2. Inviestigation: Initiate a joint monitoring working group including local people and biologists for effective two-way learning (or training) and practicing.
- **3. Identification:** Identify local utilization of forest plants and seaweeds and record local knowledge on these species.



Project site









Shi-Ti-Ping intertidal area

Amis people lives in this area extensively utilize plants and marine resources.

Explore forest resources

- 1. Expedition
 - Selection and set up Forest Dynamic Plots (FDPs).
 - Collection of land use histories of the forest.
 - Census and re-census plant of FDPs.
- 2. Tree ID and their indigenous names
 - knowledge sharing during expedition and survey.
 - interviewing seniors.



Forest Dynamics Plots (FDPs) establishment (1)









- 1. Gridding.
- 2. Label trees.

Forest Dynamics Plots (FDPs) establishment (2)









- 3. Measuring trees (Diameter at Breast Height).
- 4. Mapping and Records.
- 5. Specimens and species ID.

Seaweed survey











- 1. Field collection requires extensive local knowledge.
- 2. Labeling seaweed and Photographing.
- 3. Interview local elder is very important and valuable.

Local use of forest trees (examples)

Amis name	Scientic name	Usage and characteristics	
Lalidec	Lagerstroemia subcostata	dry and easy to burn, durable and elastic (good for make traps).	
Kavay	Ficus fistulosa	high water content, food for muntjac.	
Mui	Ardisia sieboldii	edible fruits for human, monkeys and flying squirrel.	
Alaway	Several species (e.g., Phoebe sp.)	Construction material (wall, pillar, bed)	
Latac	Murraya paniculata	elastic wood good to make arrows, spears	
Kamaya/ fida'olaw	Diospyros eriantha	bow and trap triggers	
		建位的	





Scientific name vs Amis name

	No. species with scientific name	No. species with indigenous names
Forest Plants	64	12 (18.8%)
Seaweed	96	11 (25.6%)

 Only a small portion of plant species were commonly used and named by the local Amis, but all of them have in-depth local knowledge, especially those with more than one Amis name.

Scientific Knowledge vs Amis knowledege

- 1. Universal vs. Context-based (usage-centered, habitat specific)
- 2. Taught Systematically in the School vs. Hold by Different Groups
- 3. Divided Classification vs. Inter-related Connection



Analysis and Discussion

- Policy Driven Co-management: Previously, many implementations of natural resources co-management between the state/indigenous peoples were often the central government's response to the claim of indigenous rights along with indigenous movement.
- In Lack of Efficient Mediation: However, in lack of efficient mediation in the local level, the co-management projects often turned into tokenism.
- The Experience in Our Research Team reveals:
 - 1. local database can be a media for mediation
 - 2. community input + database+ scientific input =>activate translation
 - 3. The back-and forth translation: began with typology, and deepen into the way of management

-

Conclusion

- Process of Mediation: The dialogue between indigenous knowledge/ modern science requires a process of mediation that involve human actions to establish the media, facilitate the participation, and back-and -forth translation.
- New Space Created: The mediation creates new space for selfinterpretation and mutual learning
- Loosened Power Relations: The previous uneven power relations of knowledge co-production is loosen but still need more efforts.



Thank you for listening



Special Thanks to our Research team & Local collaborators

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